

Appl. No.: 10/550,770

Amdt. Dated January 19, 2010

Response to Office Action Mailed October 20, 2009

REMARKS:

All remarks in the prior response to office action are herein incorporated by reference.

Applicant requests entry of the amendments presented above, and requests reconsideration and withdrawal of the pending rejections of the claims, for the following reasons.

Support for the amendment to claims 5, 10, 27 and 29 is found in the original specification at, among other places, FIGS. 8(a) and 8(b) and descriptions related thereto, in particular paragraphs [0055], [0059], and [0107]-[0121] as numbered in the U.S. publication of this application, U.S. Pat. App. Pub. No. US2007/0019968.

Argument. The two independent claims, Claims 5 and 10, include the following limitations:

- 1) The optical modulator has a plurality of optical modulating sections on a single substrate.
- 2) A modulating signal or a DC bias superposed with a low frequency electrical signal is applied into a specific first one of the plurality of optical modulating sections.
- 3) The DC biases of not only the specific first optical modulating section, but also of a second optical modulating section, into which the modulating signal or the DC bias without superposing of the low frequency electrical signal is applied, are controlled based on the detected change of light intensity corresponding to the low frequency electrical signal from the optical wave exiting from the specific first optical modulating section.

These features are explained in specification in particular at paragraphs [0055], [0059], and [0107]-[0121] as numbered in the U.S. publication of this application, and FIGS. 8(a) and 8(b) and accompanying descriptions.

The invention as set forth in claims 5 and 10 makes it possible to control the DC biases of the optical modulating sections into which is applied the modulating signal or the DC bias without superposing of the low frequency electrical signal. Accordingly, the invention makes it possible to reduce the number of optical modulating sections into which the modulating signal or the DC bias superposed with the low frequency electrical signal must be applied, and to simplify the method and the device for controlling bias of optical modulator.

The above described combination of features, and in particular, feature 3 listed above, are not disclosed in any of the documents cited by the examiner.

According to U.S. Pat. No. 6,118,564 to Ooi et al., the signals superposed with the low frequency signal f_0 are applied into both of the electrodes 22a and 22b in FIG. 4, as described in column 20, line 62 to column 21, line 16. Therefore, the electrodes 22a and 22b in FIG. 4 are different from the optical modulating section as set forth in the independent claims herein, into which the modulating signal or the DC bias without superposing of the low frequency electrical signal is applied.

Due to these essential differences, it is respectfully submitted that the present invention as set forth in the independent claims herein is novel and non-obvious over the cited art. It is noted that the other cited art mentioned in the Office action similarly fails to supply the features upon which the rejections depend. Therefore, the cited art, whether taken separately or in combination, fails to yield the features of the invention set forth in the independent claims as amended herein.

Conclusion. It is respectfully submitted that the application is in condition for prompt allowance and that all of the objections, rejections and requirements raised in the Office action have been met or overcome. Early, favorable treatment of this application is requested.

The examiner is encouraged to telephone the undersigned with any questions or comments so that efforts may be made to resolve any remaining issues.

Extension Request and Deposit Account Charge Authorization. The Commissioner is hereby authorized to charge any and all required fees, or credit any overpayment, associated with this communication, including fees for any necessary extension of time under 37 CFR §1.136(a) for filing this communication, which extension is hereby requested, to our Deposit Account No. 50-0305 of Chapman and Cutler LLP.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. § 1.8

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I hereby certify that the attached correspondence, namely: Response to Final Office Action, with deposit account fee charge authorization, was transmitted by facsimile on the date listed above, to the U.S. Patent Office at the facsimile number listed above, under 37 C.F.R. § 1.8.

Signature: 

Typed Name of Person Signing this Certificate: Robert J. Schneider, Reg. No. 27,383

Date of Signature: January 19, 2010